

Nevada Division of Environmental Protection Bureau of Water Quality Planning

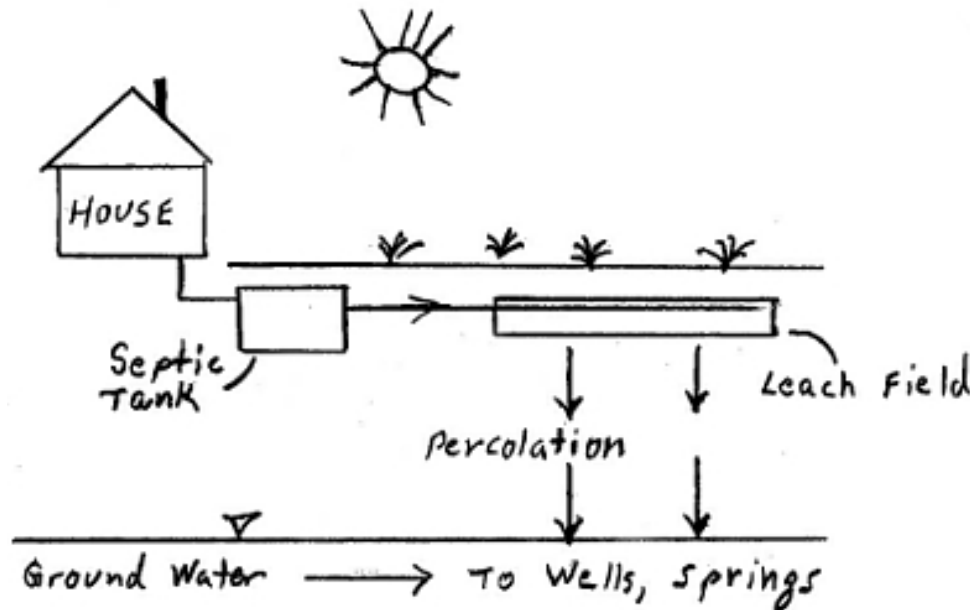
Domestic Septic Systems FACT SHEET

HOW A SEPTIC SYSTEM WORKS

Most suburban and rural Nevada homes utilizing domestic septic systems also utilize an individual domestic well for their drinking water supply. Septic systems can provide a good means for wastewater disposal if properly installed and maintained. If not, they can pose a serious threat to well water quality. The sewage can contain disease-causing bacteria, chemicals, viruses and excess nutrients, such as nitrates, which present problems to human health. Proper use and maintenance of a septic system is critical.

The modern septic tank is a watertight box usually made of precast concrete, concrete blocks, or reinforced fiberglass and installed under the ground surface. When household waste material enters the box, several things occur:

1. Organic solid material floats to the surface and forms a layer that is commonly called "scum." Bacteria in the septic tank set about to biologically convert this material into liquid.
2. Inorganic or inert solid materials that cannot be biologically converted, and the by-products of bacterial digestion, sink to the bottom of the tank and form a layer commonly called "sludge."
3. A cloudy liquid lies between the two layers and is the only ingredient that should overflow into the "soil absorption area" (leach field). This liquid can percolate down through the leach field to ground water.



The overflow of solid material into the leach field should be avoided because it will clog soil pores in the absorption area and result in system failure. Two factors contribute to solid material overflow: bacterial deficiency and failure to have sludge accumulations removed periodically.

Bacteria must be present in the septic tank to digest the organic solids. Normal household waste provides enough bacteria to digest the solids UNLESS the bacteria is killed off. Bacteria are very sensitive to environmental changes and may be destroyed by such common home-care products as the products listed below.

AVOID OR REDUCE THE USE OF

<ul style="list-style-type: none">• detergents• cleaning compounds• disinfectants• polishes• toilet cleaners	<ul style="list-style-type: none">• sink and tub cleaners• bleach• caustic drain openers• acids
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Beneficial bacteria in your septic system are very sensitive to environmental changes and may be destroyed by these common home-care products.

Check the labels on these and other products used in the home. Labels carrying any of the following warnings indicate the presence of ingredients that may kill bacteria.

- "Harmful if swallowed"
- "Avoid contact with the skin"
- "Do not get in open cuts or sores"
- "If product comes in contact with eyes, call a physician immediately"

Look for products labeled "safe for use in septic systems."

When bacteria are not present to digest and liquefy the scum at the top of the septic tank, the scum will accumulate until it overflows, clogging the leach field.

The sludge at the bottom of the septic tank is inorganic and inert material that is not biodegradable and will not decompose. If not removed on a periodic basis, it will accumulate and overflow, also clogging the leach field.

SEPTIC SYSTEM MAINTENANCE

Septic systems require two things: proper bacterial action and periodic pumping. A properly functioning system helps prevent ground water from being polluted by bacteria, viruses and nitrate

To ensure that proper bacterial action takes place, the system should receive normal household waste that contains the organisms necessary to initiate and promote anaerobic digestion. All bacteria-killing products should be disposed of properly according to label directions and should not be disposed of in the household septic system.

The frequency of pumping the septic tank will depend on the size of the tank, the number of people occupying the home, the frequency of garbage disposal use, and the condition of the system. Since there is no tank additive that will dissolve or eliminate the accumulation of sludge, IT MUST BE PUMPED OUT. Failure to pump periodically can cause solids to overflow into the leach field. This can clog the system and may force replacement of leach field piping at considerable expense and inconvenience.

Generally, a properly designed tank of 1,000 gallons capacity and used by a family of 4 people should be pumped about every 3 years. More frequent pumping may be necessary in larger families or if a garbage disposal is used or excessive amounts of household grease enter the system.

Pumping of septic tanks should be performed by professionals who have the necessary equipment to do the job properly. They can be found in the Yellow Pages of your telephone directory under "Septic."

WARNING SIGNS OF SEPTIC SYSTEM PROBLEMS

- Sluggish drains in the home
- Plumbing backups
- Gurgling sound in pipes or drains
- Outdoor odors
- Mushy ground or greener grass around septic system

OTHER CAUSES OF SEPTIC FAILURE

- Placement in poor drainage area
- Overloading: Use water sparingly. Do only full loads of wash at off-peak times, if possible, and try to limit the number of loads daily.
- Pouring kitchen grease into drains.
- Flushing cigarette butts, sanitary napkins or other inorganic materials down the toilet.
- Extensive use of garbage disposals. Ground up foods are hard on septic systems because they are not digested first by the human body.
- Use of salts and chemicals from water softeners and washing machines can damage septic tanks. Channel washing machine water and waste from water softeners into a separate disposal area such as a dry well, if permitted.
- Tree roots clogging pipes. Contact a septic contractor for repairs.

HOW CAN I GET MORE INFORMATION?

If you would like to obtain more information about domestic septic systems, contact the Bureau of Health Protection Services and (775) 687-4754.

If you are interested in finding out more about protecting and/or analyzing your well water, go the Nevada Division of Environmental Protection web page <http://ndep.nv.gov/>, go to Water Pollution Control and click on Publications and Fact Sheets. If you have any other water quality questions, you can contact the Bureau of Water Pollution Control at (775) 687-4670.